REMARKS/ARGUMENTS

Reconsideration of the above-identified application respectfully requested.

The Declaration of Dr. Dominic A. Cataldo

Dr. Cataldo, as an inventor on the subject application, conducted comparative tests on the pest control agent of Knudson (U.S. Patent no 4,849.006) and the subject disclosure. The details of the tests and results are set forth in Dr. Cataldo's declaration.

Specifically, Dr. Cataldo notes that Knudson does not disclose or teach mixing of clay and pest control agent at anything but ambient temperature. Thus, Dr. Cataldo repeated the procedure for loading clay with pest control agent as disclosed by Knudson. Dr. Cataldo also repeated the Knudson procedure, but with heating of the clay and pest control agent, as taught in the above-identified application.

As a comparative point of reference for the physical/dynamics of the experimental systems, Dr. Cataldo compares the behavior of the neat active. In his study, Dr. Cataldo reports complete depletion in 17 days of the neat active that was applied to filter paper, compared to Knudson's 6 days. While in Knudson's system, depletion of organoclay sorbed active occurs within 12-15 days, the disclosed system, a similar nanoclay system but for the loading of heated ingredients, have a depletion rate of 40% of the active lost after 37 days, with a 100% loss time of from about 70 days, using a linear extrapolation method of estimation.

With respect to the loading under heating, Dr. Cataldo reports that attempts to load solvent saturated actives and/or heated/liquid actives into cooler clays has resulted in the actives condensing onto the outer surface of the clays, or with solvent intercalated systems the evaporation of the solvent actually causes the active to leave the clay by entrainment in the evaporating solvent. The latter results in much lower loading rates in the unheated versus heated systems (<20 versus >40% w/w). Since the present procedure employ these systems as active carriers within a secondary polymeric delivery system, the lack of both internal absorption of the active into the clay, and the presence of active external to the clays (Knudson results), results in much higher release rates, and lower functional longevities, which in his applications frequently must function for 1-30 years.

Based on the reported data and other work of Dr. Cataldo's in the development of the disclosed system, he concludes:

(a) These experiments were conducted using the same active ingredient as is used in the examples of U.S. Patent No. 4,849,006 and a variety of organoclays that are within the scope of the above-identified application.

(b) U.S. Patent No. 4,849,006 is silent regarding the temperature at which the absorption of the active ingredient into the organoclay occurs. The reported examples imply

absorption at ambient temperature. There certainly is no disclosure or teaching to use other than ambient temperature.

(c) The present application and thermal experiments show that the release-rate performance of such nanoclay/active ingredient products depend strongly on the temperature at which the liquid pesticide is mixed with the organoclay, *i.e.*, greater intercalation.

(d) The usefulness of these pesticide products is closely related to the number of days in which the active ingredient remains in the end use environment. Our thermal mixing method provides superior longevity.

(e) Our cost of attaining a given number of effective days in the environment is lower than that of Knudson due to our need to use less of the ingredients.

(f) We have found in many other pesticide experiments that the combination of superior composite materials made from absorption of active ingredient into organoclay is greatly enhanced by their dispersal in specific polymer matrices. U.S. Patent No. 4,849,006 (bottom of column 5 and top of column 6) dismisses this aspect y discussing the formulation of the two ingredients with addition ingredients. We form the sorbed product and only then do we combine this composite material with the specific polymer. We have demonstrated in previous experiments that combining all three is not as good.

The claims have been amended to call for the heating of the ingredients for loading. See, for example, the application at p. 21, ll. 4-5.

Conclusion

In view of the remarks submitted herewith, allowance of the claims and passage to issue of this application respectfully is requested.

Respectfully submitted,

Date: 30 September 2008

Jerry K. Mueller, Jr.
Reg. No. 27,576
MUELLER SMITH
A Legal Professional Association
Mueller-Smith Building
7700 Rivers Edge Drive
Columbus, Ohio 43235-1355

Tel.: 614-436-0600
Fax: 614-436-0057
email: *smueller@muellersmith.com*